

Delta Operations for Salmonids and Sturgeon (DOSS) Group
Conference call: 4/23/13 at 9:00 a.m.

Objective: Provide advice to the Water Operations Management Team (WOMT) and National Marine Fisheries Service (NMFS) on measures to reduce adverse effects from Delta operations of the Central Valley Project and the State Water Project on salmonids and green sturgeon. DOSS will work with other technical teams. DOSS notes and advice can be found at: <http://www.swr.noaa.gov/ocap/doss.htm>.

DWR: Mike Ford, James Gleim, Loi Tran

FWS: Leigh Bartoo, Craig Anderson, Roger Guinee

NMFS: Barbara Rocco, Garwin Yip, Jeff Stuart, Barb Byrne

Reclamation: Russ Yaworsky, Josh Israel

DFW: Colin Purdy

EPA: Erin Foresman

SWRCB, USGS: not present

Agenda

1. Fish monitoring
2. Current operations
3. Check in: notice to WOMT re: steelhead loss density calculations

Fish Monitoring: The following table presents fish monitoring data. Unless otherwise noted, reported sizes are fork length. See also:

<http://www.water.ca.gov/swp/operationscontrol/calfed/calfedmonitoring.cfm>.

Location	Chippis Is. Midwater Trawl	Sacramento Trawls	Mossdale Kodiak Trawl	Tisdale RST	Beach Seines
Sample Date	4/15, 17, 19	4/15, 17, 19	4/16–4/20	4/16–4/19, 22	4/16–4/18
Total Catch	111	1,067	1,221	2	104
FR	5	477	1,221	1	36
WR	1				
SR	52	249		1	4
LFR					
Ad-Clipped Chinook	42	339			9
DS	3 (74–102 mm; no expression)	1 (84 mm; no expression)			
Splittail	4 (100–219 mm)				55
Longfin	3 (77–103 mm)				
SH (ad-clip)		1 (241 mm)			
SH (wild)	1 (349 mm)				
W. Temp. (avg. °F)	60.8	61.2		58.0	60.3
Flows (avg. cfs)				5,806	
Turbidity (avg. NTU)	147.8	18.2		11.9	30.4

WR/LFR Avg. CPUE					
FR/SR Avg. CPUE				0.03	

Key: FR = Fall run; LFR = Late-fall run; SR = Spring run; WR = Winter run; SH = Steelhead; DS = Delta smelt; LFS = Longfin smelt; CPUE = catch per unit of effort; ACT = acoustic tag; N/A = not available

Glenn-Colusa Irrigation District (GCID): DFW reported the following for 2 days of sampling at the GCID rotary screw trap (RST) site, approximately 50 miles north of the Tisdale RST location.

- 4/16/13: 728 non-ad-clipped Chinook were caught, of which 700 were fall run, 26 were spring run, and 2 were winter run; 156 ad-clipped fall run were also caught. Many of these fish are most likely from the first of the Coleman production releases of fall-run Chinook.
- 4/20/13: 14 non-ad-clipped Chinook were caught, of which 13 were fall run and 1 was spring run; 1ne ad-clipped fall run was also captured.

A second production of 5.6 million fall-run Chinook will be released into Battle Creek near Coleman National Fish Hatchery (Coleman) tomorrow, 4/24/13.

Mossdale: The season total catch of Chinook since 4/2/13 is 1,972. No *O. mykiss* were captured in monitoring efforts since 4/13/13. The season total is 8 *O. mykiss*, 7 ad-clipped study fish, and 1 non-ad-clipped fish (225 mm).

Fish Salvage: Geir Aasen (DFW) provided the fish salvage report covering 4/15/13 through 4/21/13 and emailed it to DOSS participants. This report is posted at <ftp://ftp.delta.dfg.ca.gov/salvage> and you can locate the table under folder “DOSS salvage tables” (also try <http://www.dfg.ca.gov/delta/apps/salvage/Default.aspx> and click on “salvage FTP site”).

Fujimura’s (DFW) report on salvage for 4/15–4/21/13 was provided by e-mail and summarized for the DOSS call participants

The number of salvaged steelhead last week markedly decreased compared to the previous week. There were 34 non-ad-clipped steelhead salvaged during the reporting period. The estimated daily loss densities ranged from 0.9 to 11.1 fish/TAF and exceeded the first-stage loss criterion (8 fish/TAF multiplied by export volume) on 1 out of 7 days. The season total of salvaged non-ad-clipped steelhead is 567. Nineteen ad-clipped steelhead were also salvaged during the reporting period.

No non-ad-clipped older juvenile Chinook salmon were salvaged last week. The salvage numbers of non-ad-clipped juvenile Chinook for both spring-run- and fall-run-sized fish increased. Note that the spring-run- and fall-run-sized fish are young-of-year and are not included in the “older juvenile” category. There were 475 non-ad-clipped juvenile Chinook salvaged, of which 101 were spring-run size and 374 were fall-run sized. Four ad-clipped winter-run-sized Chinook were also salvaged last week. DWR reported on the call that the tags from these winter-run-sized fish indicated that the fish were part of the 11/29/12 late-fall-run Chinook release from Coleman.

No sturgeon were observed last week.

Preliminary loss from 4/22/13: The preliminary estimate of steelhead loss was 17.32 with a density of 3.77 fish/TAF.

Compiled by Bob Fujimura on April 22, 2013

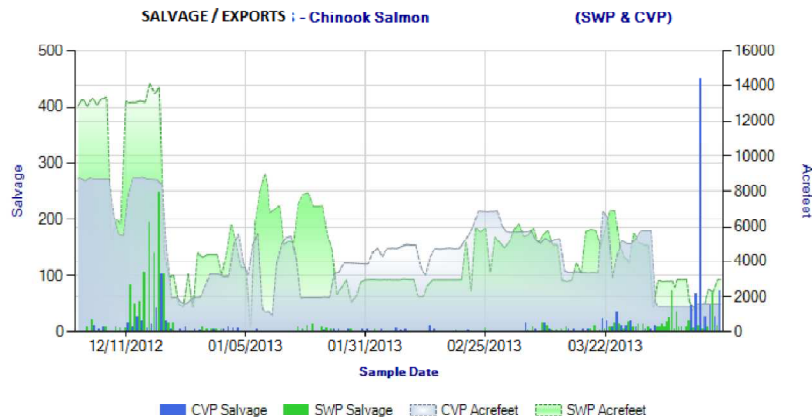


Figure 1. Daily salvage of Chinook salmon (all races) and water exports from the state and federal fish salvage facilities during December 1, 2012 through April 21, 2013. Graph obtained from the DFG salvage monitoring web-page: <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>.

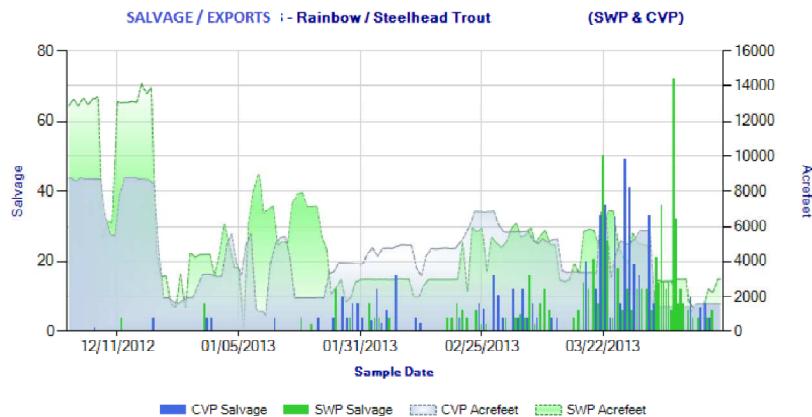


Figure 2. Daily salvage of steelhead and water exports from the state and federal fish salvage facilities during December 1, 2012 through April 21, 2013. Graph obtained from the DFG salvage monitoring web-page: <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>

DOSS Weekly Salvage Update								
Reporting Period: April 15-21, 2013								
Prepared by Bob Fujimura on April 22, 2013 2200								
Preliminary Results - Subject to Revision								
Criteria	15-Apr	16-Apr	17-Apr	18-Apr	19-Apr	20-Apr	21-Apr	Trend
Loss Densities								
Wild older juvenile CS	0	0	0	0	0	0	0	0.0
Wild steelhead	11.11	0	0.91	0.92	4.30	5.66	0	4.0
Exports								
SWP daily export	1,787	1,365	1,365	1,379	2,426	2,302	2,984	1,944
CVP daily export	1,163	1,608	1,604	1,602	1,600	1,601	1,606	1,541

Loss Density = fish lost/TAF; water export = AF; Trend = compared to previous week; wild = adposse fin present
 Loss = estimated number of fish lost at the CVP and SWP Delta export facilities based on estimated salvage (see below)

Chinook Salmon Weekly/Season Salvage and Loss						
Combined salvage and loss for both CVP and SWP fish facilities						
Race determined by size at date of capture; hatchery = adipose fin missing;						
Category	Weekly Total			Season Total		
	Salvage	Loss	Trend	Salvage	Loss	
Wild						
Winter Run	0	0	→	271	731	
Spring Run	101	245	↘	363	1,202	
Late Fall Run	0	0	→	85	277	
Fall Run	374	547	↘	544	1,099	
Unclassified	0	0	→	8	5	
Total	475	792		1,291	3,314	
Hatchery						
Winter Run	4	20	↗	187	595	
Spring Run	0	0	→	0	0	
Late Fall Run	0	0	→	761	2,898	
Fall Run	0	0	→	415	1,522	
Unclassified	0	0	→	0	0	
Total	4	20		1,363	5,015	

Trend = weekly loss per race; Salvage = estimated number of fish collected by the CVP and SWP fish protective facilities per unit of time

Steelhead Weekly/Season Salvage and Loss						
Combined salvage and loss for both CVP and SWP fish facilities						
Category	Weekly Total			Season Total		
	Salvage	Loss	Trend	Salvage	Loss	
Wild	34	82	→	567	1,576	
Hatchery	19	42	↘	636	1,630	
Total	53	124		1,203	3,206	

State Water Project loss = salvage x 4.33; Central Valley Project loss = salvage x 0.88

Hatchery Coded-Wire-Tag (CWT) Results (as of 4/21/13, see table below): All ad-clipped Chinook salmon salvaged at the Delta fish facilities for this reporting period were from the 11/29/12 late-fall-run production group from the Coleman, but were classified as winter-run based on the Delta model length-at-date criteria. The cumulative loss for this group based on the number released is 0.509%; however, there is no trigger associated with this production release.

CONFIRMED HATCHERY (ADIPOSE FIN CLIPPED) CHINOOK SALMON LOSS AT THE SWP & CVP DELTA FISH FACILITIES, 2012/2013

Release Date	CWT Race	Hatchery	Release Site	Release Type	Confirmed Loss	Number Released ¹	Total Entering Delta	% Loss of Number Released ²	% Loss of Total Entering Delta ³	First Concern Level	Second Concern Level	Date of First Loss	Date of Last Loss
11/5/2012	F	Mokelumne River Hatchery	Mokelumne River	**	599.45	100,633	n/a	0.596	n/a	n/a	n/a	12/5/2012	4/8/2013
11/29/2012	LF	Coleman NFH	Battle Creek	Production	4100.48	805,542	n/a	0.509	n/a	n/a	n/a	12/9/2012	4/21/2013
12/18/2012	LF	Coleman NFH	Battle Creek	Spring Surrogate	74.95	72,974	n/a	0.103	n/a	0.5%	1.0%	12/31/2012	3/23/2013
1/8/2013	LF	Coleman NFH	Battle Creek	Spring Surrogate	138.70	79,000	n/a	0.176	n/a	0.5%	1.0%	1/20/2013	3/27/2013
1/25/2013	LF	Coleman NFH	Battle Creek	Spring Surrogate	24.40	85,000	n/a	0.029	n/a	0.5%	1.0%	2/3/2013	3/31/2013
2/7/2013	W	Livingston Stone NFH	Caldwell Park	Production	8.59	182,662	96,525	0.005	0.009	0.5%	1.0%	3/25/2013	3/25/2013

UNCONFIRMED HATCHERY (ADIPOSE FIN CLIPPED) CHINOOK SALMON LOSS AT THE SWP & CVP DELTA FISH FACILITIES, 2012/2013

Facility	Unknown CWT Loss ⁴	Unread CWT Loss ⁵	Unknown Hatchery Loss ⁶	Acoustic Tag Loss ⁷	Number of Unassigned CWTs ⁸
SWP	45.16	0.00	0.00	17.93	1
CVP	5.20	0.00	0.00	0.00	0
TOTAL	50.36	0.00	0.00	17.93	1

SWP and CVP adipose fin clipped Chinook lost from 10/1/2012 through 4/21/2013.

¹Number released with the adipose fin clipped and a CWT.

²% Loss of Number Released = (Confirmed Loss/Number Released)*100.

³% Loss of Total Entering Delta = (Confirmed Loss/Total Entering Delta)*100.

⁴Adipose fin clipped Chinook was observed during fish count, but tag code could not be determined (e.g., damaged tag, lost tag, no tag, or Chinook accidentally released).

⁵Adipose fin clipped Chinook was collected during fish count and has not been processed yet.

⁶CWT has been read, but hatchery release information not yet available.

⁷Adipose fin clipped Chinook released due to presence of sutures.

⁸CWT cannot currently be assigned to a salvage record with certainty since the CWT was lost and then found. CWT may be assigned to a salvage record if new information is available.

** Information not yet available.

DWR-DES Revised 4/22/2013

Preliminary data from DFW, DWR, FWS, and Reclamation; subject to revision.

Operations (4/23/13)

SWP		CVP	
Exports (cfs)			
Clifton Court Forebay	1,700 (might increase to 2,200 on 4/25)	Jones Pumping Plant	800 (might go up on 4/26 but will reassess tomorrow)
Reservoir Releases (cfs)			
Feather - Oroville	1,300 (might go up to meet Emmaton standard)	American - Nimbus	1,000
		Sacramento - Keswick	8,500 (increase to 9,000 on 4/24 and 9,500 on 4/25 to meet Wilkins Slough flow standard)
		Stanislaus - Goodwin	3,000
Reservoir Storage (in TAF, % of capacity)			
San Luis (SWP)	458 (43)	San Luis (CVP)	720 (75)
Oroville	3,111 (88)	Shasta	3,876 (85)
New Melones	1,509 (62)	Folsom	671 (69)
Delta Operations			
DCC	Closed	Sacramento River at Freeport (cfs)	7,435
Outflow Index (cfs)	6,900	San Joaquin River (cfs) at Vernalis	2,678
Total Delta Inflow (cfs)	11,251	OMR (daily) (cfs)	
Water Temperature (°F)	64.2 (17.9°C; 3-station avg)	OMR 5-day avg (cfs)	-834
X2 (km)	81	OMR 14-day avg (cfs)	-378
E/I (%)	15.4 (14-d avg)		

Previous Notice to WOMT Regarding Action IV.2.3 Steelhead Triggers: DOSS received some suggested clarifications to Yip's (NMFS) email to WOMT that was included as an attachment to last week's DOSS notes. Byrne (NMFS) believes that the group understands the current calculation procedure, but wants to check in with the group about the preferred way to document any final clarifications. Approaches to consider: DOSS could include further clarification in the DOSS notes next week, DOSS could prepare a summary of the issue (including a guidance document on how the calculations were made) for the 2013 DOSS Annual Report (annual report) and include it as an attachment to the DOSS notes in the near future, or DOSS could simply provide the full summary in the annual report.

DOSS decided that it would be best and simplest to include the summary and guidance in the annual report. Byrne will ask Yu (DWR) to draft the summary.

Smelt Working Group (SWG): SWG met on Monday and agreed that the current operations are protective of both delta and longfin smelt; however, should OMR approach levels from -2,500 to -3,000 cfs, SWG would meet again and possibly recommend more restrictive OMR flows.

Update on NMFS RPA Implementation:

RPA Action IV.2.1: Vernalis flow is currently ~2,700 cfs; therefore, the 1:1 I:E ratio, not the health & safety exception pumping level of 1,500 cfs (when Vernalis flow was less than 1,500 cfs), is being implemented. Vernalis flow is anticipated to fall below 1,500 cfs again in mid-May, after the pulse period ends.

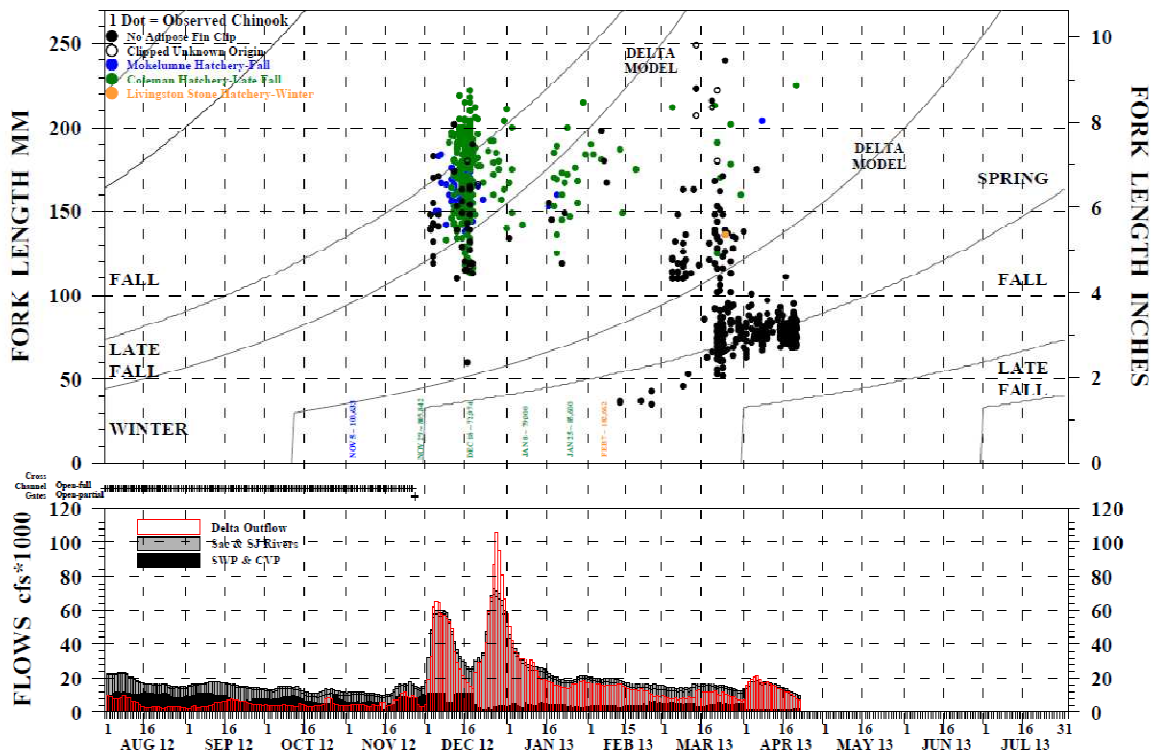
RPA Action IV.2.3: The current requirement under this action is for OMR to be no more negative than -5,000 cfs.

DOSS Advice to WOMT and NMFS: None.

Next Meeting: The next DOSS conference call is scheduled for 4/30/13, at 9:00 a.m.

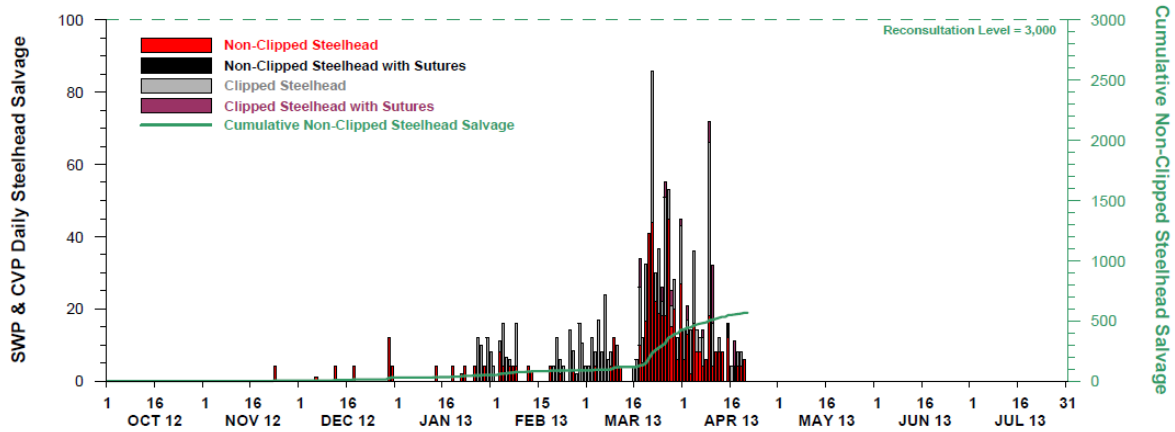
Below are graphs provided by DWR for Chinook salmon and steelhead salvaged or lost at the Delta fish facilities and observed in the Sacramento and San Joaquin rivers. For additional graphs, please visit the DWR website at: <http://www.water.ca.gov/swp/operationscontrol/calFed/calFedmonitoring.cfm>.

OBSERVED CHINOOK SALVAGE AT THE SWP & CVP DELTA FISH FACILITIES 08/01/2012 THROUGH 04/21/2013



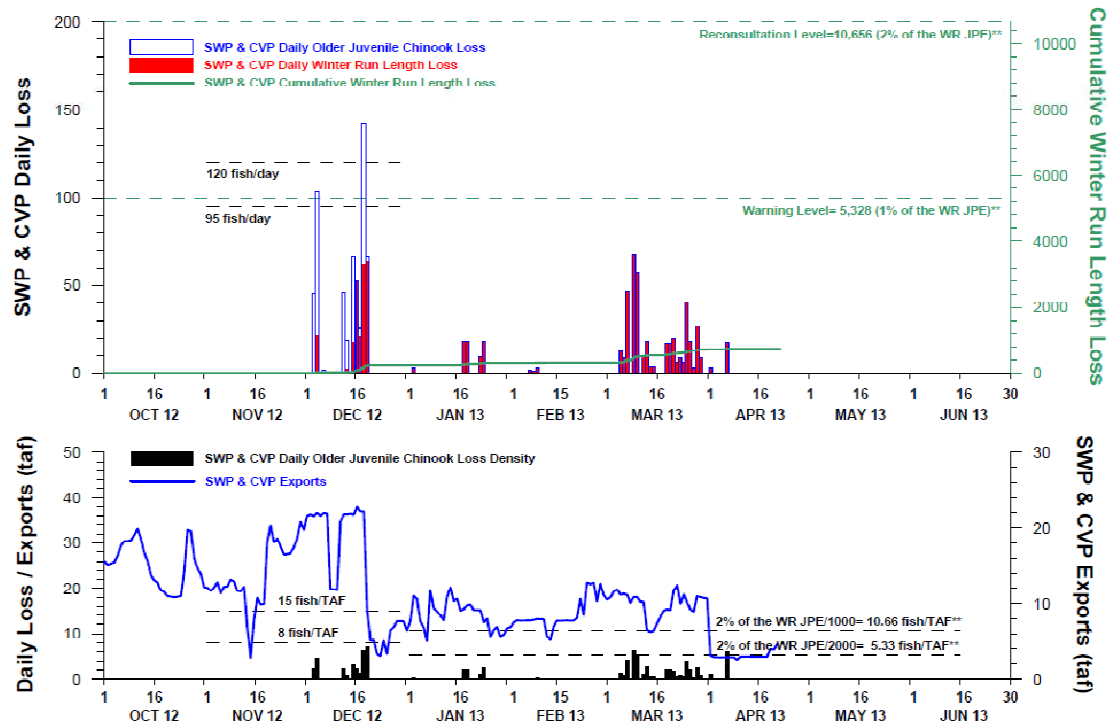
DWR-DES/22 APR 2013
 Preliminary data from DFW, DWR, FWS, Reclamation, and CDEC; subject to revision.
 *Chinook outside of the length-at-date criteria (Delta model) are not reported.

STEELHEAD SALVAGE AT THE DELTA FISH FACILITIES 01 OCT 2012 THROUGH 21 APR 2013



DWR-DES 22 APR 2013
Preliminary data from DFW; subject to revision.

NON-CLIPPED WINTER RUN & OLDER JUVENILE CHINOOK LOSS AT THE DELTA FISH FACILITIES 01 OCT 2012 THROUGH 21 APR 2013



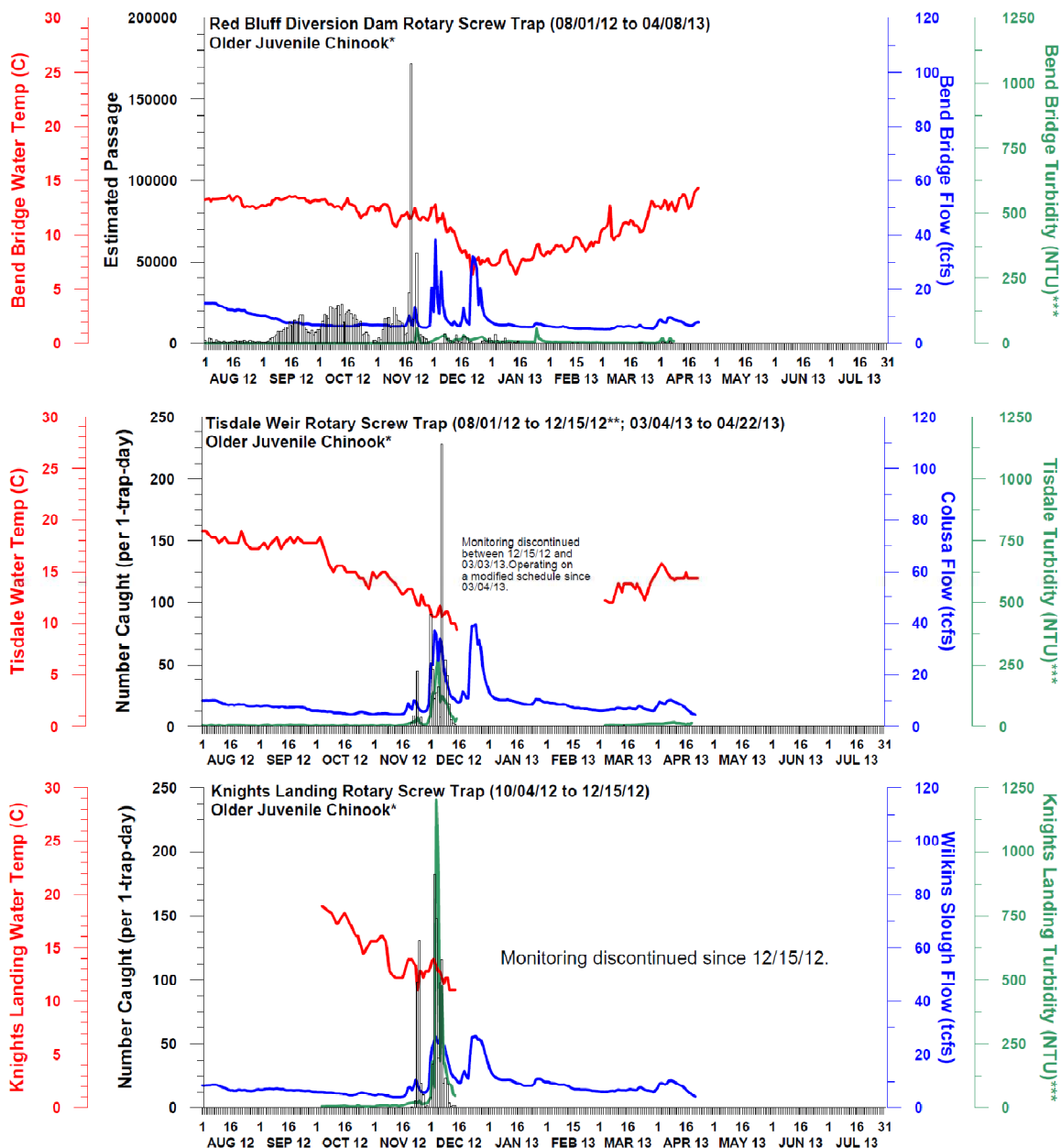
DWR DES 22 APR 2013

Preliminary data from DFW; subject to revision.

*Older juvenile Chinook defined as all Chinook above the minimum winter run length-at-date criteria and below the maximum size included in the length-at-date criteria (Delta model).

**Based on the final juvenile production estimate (JPE), which comes out to be about 532,809 non-clipped winter run (WR) Chinook entering the Delta during water year 2013.

NUMBER OF UNMARKED OLDER JUVENILE CHINOOK MEASURED IN THE SACRAMENTO RIVER



DWR-DES 22 APR 2013

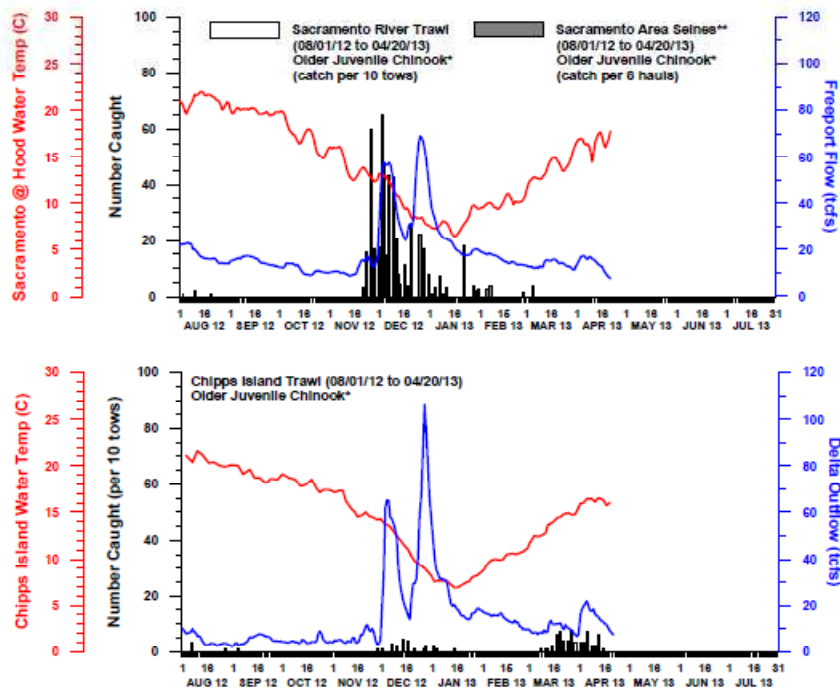
Preliminary data from DFW, FWS, and CDEC; subject to revision.

*Older juvenile Chinook defined as all Chinook above the minimum winter run length-at-date criteria and below the maximum size included in the length-at-date criteria (Frank Fisher model).

** Tisdale Weir: One older juvenile caught on 9/14 and 43 older juveniles caught on 11/25. However, CPUE was not calculated due to problems with the cone clickers. As a result, data are not presented on the graph.

***Turbidity is a discrete measurement and is not measured continuously. Therefore, data are interpolated on days when turbidity was not measured.

NUMBER OF UNMARKED OLDER JUVENILE CHINOOK MEASURED IN THE LOWER SACRAMENTO RIVER & CHIPPS ISLAND



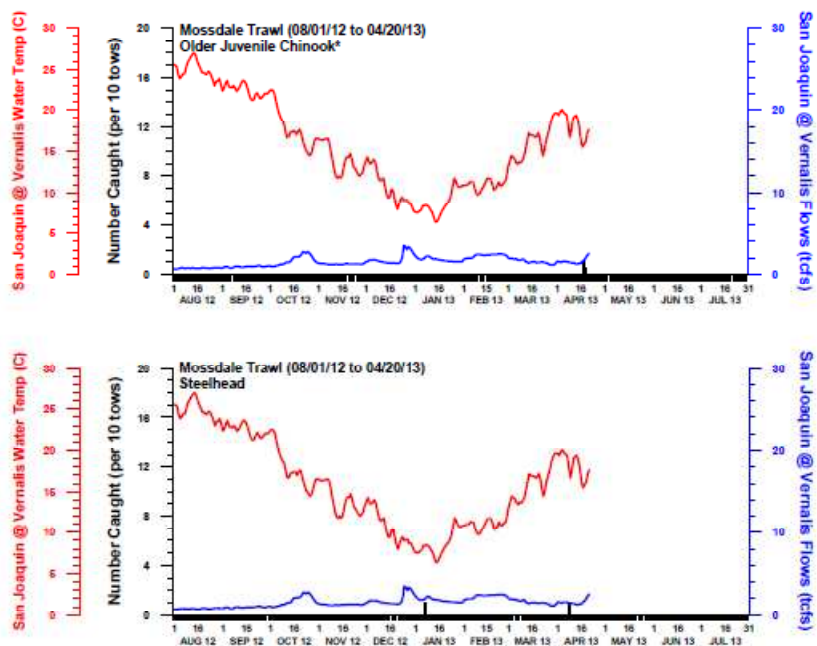
DWR-DES 22 APR 2013

Preliminary data from FWS and CDEC; subject to revision.

*Older juvenile Chinook defined as all Chinook above the minimum winter run length-at-date criteria and below the maximum size included in the length-at-date criteria (Frank Fisher model).

**Sacramento area seine route consists of the following seine sites: Verona, Elkhorn, Sand Cove, Discovery Park, American River, Miller Park, Sherwood Harbor, and Garcia Bend. Bars are stacked if Chinook caught from the trawl and seines are from the same day.

NUMBER OF UNMARKED OLDER JUVENILE CHINOOK AND UNMARKED STEELHEAD MEASURED IN THE SAN JOAQUIN RIVER



DWR-DES 22 APR 2013
Preliminary data from DFW, FWS, and CDEC; subject to revision.
*Older juvenile Chinook defined as all Chinook above the minimum winter run length-at-date criteria and below the maximum size included in the length-at-date criteria (Frank Fisher model).